Chapter 3

Emergency Management

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Emergency Management*

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*** Major revision**

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Emergency Management

3.1 Introduction

Laboratory policy is to develop and maintain an emergency management system that is capable of responding to and mitigating the consequences resulting from operational emergencies. Operational emergencies are significant accidents, incidents, events, or natural phenomena that could seriously degrade the safety or security of LLNL facilities.

The scope and extent of emergency planning and preparedness at LLNL is based upon, and commensurate with, the hazards and potential consequences associated with a facility and its operation. The command and control structure for the management of emergencies at LLNL is the Incident Command System.

This chapter provides general guidelines for managing emergency situations at the Laboratory. Refer to the *LLNL Emergency Plan* (UCRL-MA-113311) for more specific guidance, if necessary.

3.2 Applicability

The emergency planning and response procedures in this supplement apply to all Laboratory facilities and property at the Livermore site and Site 300, and to operations and activities conducted by Laboratory employees, subcontractors, visitors, and guests.

3.3 Requirements/Regulatory Summary

The requirements in this chapter are based on the DOE orders listed in Section 3.8.

3.4 Guidelines for Managing Emergencies

3.4.1 Planning for Emergencies

Formal planning for emergencies is based on hazards assessment documents that are prepared within each Directorate. Hazards assessments provide the basis for developing emergency plans and include event scenarios, identification of event indicators, event consequences, emergency planning zones, emergency action levels, and response actions. Hazards are described in detail in operational safety procedures (OSPs), Safety Analysis Reports (SARs), Safety Analysis Documents (SADs), and facility safety procedures (FSPs). These documents are modified as conditions change.

LLNL incorporates a broad range of hazards and potential consequences, as well as past lessons learned from simulated and actual emergencies that have occurred at LLNL or other Department of Energy (DOE) facilities, into the Emergency Management System during the planning stages. The degree of emergency planning and preparedness for a particular facility directly corresponds to the type and scope of hazards and the consequent potential for harm.

The *LLNL Emergency Plan*,

- Sets forth LLNL's comprehensive Emergency Management Program for response, mitigation, and recovery from emergencies that occur on LLNL property or those that take place offsite but have a potential impact on LLNL. Situations with a potential impact on the Laboratory include
  - Bomb threats.
  - Civil disturbance.
  - Declared state of national alert.
  - Explosion.
  - Fire.
  - Natural disaster (e.g., earthquake).
  - Offsite incident affecting LLNL.
  - Incidents involving radiation or radioactive materials.
  - Incidents involving hazardous materials and waste.
  - Terrorism.
- Delineates LLNL's general emergency response policies, procedures, and commitments.
- Describes how the integrated matrix system common to LLNL operations functions in an emergency.
- Specifies institutional responsibilities concerning the management of and recovery from emergencies.

It is not possible to list in this plan all events that could occur during any given emergency situation. However, a combination of adequate hazards assessment and an effective emergency plan provides the framework for responses to credible emergency situations.

3.4.2 Concept of Operation during an Emergency

Incident Commander. The first responder (i.e., the LLNL Fire Department) to all non-security emergencies is responsible for controlling the incident until it is mitigated or stabilized. The Safeguards and Security Department performs a similar function for security incidents. The Incident Commander for either the Fire Department or Safeguards and Security Department maintains on-scene command and control and keeps the on-duty Laboratory Emergency Duty Officer (LEDO) informed.

The Laboratory Emergency Duty Officer (LEDO). As consultant to the Incident Commander and a link to the Director's Office and cognizant senior program

management, the LEDO is delegated full authority by the Laboratory Director to take the actions necessary to protect the health and safety of employees, the public, and the environment, and to maintain the security of the facility. The LEDO is responsible for

- Monitoring events and conditions that could be indicative of an operational emergency, and for ensuring that such conditions are recognized and appropriate indicators are applied to estimate the severity of those events in a timely manner.
- Declaring an event an operational emergency; activating the Emergency Management Team (EMT) and the Emergency Management Center (EMC) based on information obtained from the Incident Commander, the Emergency Response Guide, or other sources; and for becoming the LLNL Emergency Manager in charge of the Onsite Emergency Response Organization (OERO).
- Providing strategic direction and response for mitigation, termination, and recovery during operational emergencies.
- Evaluating the broad impact of the emergency on the facility, and determining response priorities and the level of response by the OERO.
- Declaring the emergency event classification and issuing protective action orders for onsite personnel.
- Making recommendations to state and local emergency service organizations for offsite protective actions.
- Ensuring that necessary staffing and other critical resources are obtained.
- Approving press releases.
- Coordinating recovery activities.
- Ensuring that the notification processes described in Chapter 4 have been initiated.

ES&H Team. The Incident Commander works closely with the area ES&H team through the ES&H team leader to develop an Incident Action Plan for controlling an emergency. This plan identifies health and safety requirements; strategic goals; and tactical objectives required to protect life, the environment, and property. Under the direction of the Incident Commander, a liaison (ES&H team leader, deputy, or lead technician) for the cognizant ES&H team will coordinate all activities at the emergency scene. The ES&H team liaison and environmental analyst (from the particular ES&H team) will coordinate ES&H situations that may have a potential impact on the environment.

During normal working hours, the area health and safety technician responds to emergencies. After normal working hours, the off-shift health and safety technician responds to onsite emergencies and coordinates environmental

responses with the on-call Emergency Duty Officer through the Fire Dispatcher.

3.4.3 Self-help Organizations

A large-scale emergency may overburden the Onsite Emergency Response Organization. Consequently, there may be significant delays to some requests for assistance as responses may have to be prioritized. Under these conditions, departments, divisions, or facilities will need to react locally to the emergency utilizing the self-help organizations for periods of 8 hours or longer.

The Laboratory (including Site 300) is divided geographically into eighteen self-help zones, each of which has a control point, a zone supervisor, and several assembly points. Assembly point leaders direct local emergency activities from the assembly points. The EMT provides overall coordination and direction to self-help organizations during operational emergencies.

Laboratory Self-help Program Manager. The Self-help Program Manager from the Emergency Preparedness and Response Division is responsible for providing direction to and oversight of the Laboratory's Self-help Program. During emergencies wherein the Self-help Program is activated, the Self-help Program Manager is responsible for

- Coordinating information between the EMT and the zone control points.
- Providing guidance and assistance to other Self-help Program Managers in developing plans, organizing and training personnel, and coordinating Laboratory resources.

Program management is responsible for ensuring that Self-help Plans are reviewed annually and that the review is appropriately documented.

Zone Supervisor. If an emergency necessitates personnel evacuation from buildings and assembly at the assembly points, the zone supervisor is responsible for

- Coordinating the self-help emergency activities within the zone and establishing a communication link with the EMC.
- Obtaining an account of all personnel and reports of injuries and property damage from assembly point leaders and transmitting the information to the EMC.
- Providing advice and recommendations to assembly point leaders and keeping them advised of conditions on the Laboratory site and within the zone.
- Directing the activities of the zone control point staff.

Assembly Point Leaders. If an emergency requires evacuation from a building and assembly at the assembly point, the assembly point leader is responsible for supervising emergency activities in an assigned area within the zone. These activities include

- Making sure that all personnel who should be in the assigned area are accounted for.
- Providing care and protection to personnel.
- Providing first aid.
- Transporting injured personnel.
- Assessing and reporting emergency situations.
- Protecting facilities.
- Overseeing the search and rescue operations of re-entry teams.

3.4.4 Evacuation Drills and Exercises

Evacuation drills and exercises are conducted to test the response capability of the Laboratory's Emergency Response Organizations, and to ensure that all Laboratory personnel are properly trained to respond to an actual emergency. The scenarios for these drills and exercises range from specific building evacuation to a simulated earthquake and involve actions from all onsite personnel.

Employees are informed of evacuation drills and exercises through *Newsline*, handouts distributed at the gate, and the LLNL radio station KKG291 (1610 AM).

3.4.5 Emergency Evacuation and Shelter

Depending on the type of emergency, the Incident Commander or EMT may ask employees to evacuate or take shelter within the building. Employees may also receive instructions from one or more of the following sources:

- The Incident Commander.
- The LLNL Emergency Voice Alarm System.
- The Self-help Program emergency communications structure.
- The LLNL radio station KKG291 (1610 AM).

If employees are to evacuate a building, they should proceed to the nearest assembly point and leave the area only when instructed to do so by the assembly point leader. Employees who are instructed to take shelter within the building should immediately move indoors, close all windows and doors, and stay inside until provided with further instructions.

3.4.6 Use of Vehicles during Emergencies

It is essential to have the necessary personnel and equipment at the scene of an emergency promptly. Thus, Laboratory vehicles shall be relinquished for this service when needed. Requests by emergency response personnel for taxi

service to an emergency scene shall be given immediate priority. The Incident Commander may also request taxi service for other situations related to the emergency. During an off-shift emergency, all taxis are available for use by emergency response personnel. Taxi drivers on emergency service must obey all traffic regulations.

3.4.7 Post-Emergency Control

The Incident Commander will formally transfer control of the incident scene to the ES&H team liaison upon stabilization of the scene or termination of activities by the first responder. Depending on the size and extent of the emergency, control of the scene may then be transferred to an environmental analyst, if environmental cleanup is required, or returned to the program if the area is deemed safe by the ES&H team.

Release of the incident scene will occur only after the ES&H team has completed its preliminary investigation to determine what happened and the LLNL management responsible for the activity, facility, or program has reached a decision on the need for a more formal investigation (e.g., incident analyses). Chapter 4 of this Manual describes LLNL incident analysis procedures.

Parts of a facility or area may either be deemed unsafe for use or will be turned over to an Incident Analysis Committee while the rest of the facility can resume normal operations. In such cases, the ES&H team leader and the facility manager should establish a limited-access area. If restriction to the area is for more than 4 hours or extends into the next shift, then

- The facility manager should keep all facility personnel and the ES&H team leader informed about the area access controls and work stoppage procedure.
- The ES&H team leader should keep the emergency dispatcher informed about the conditions and status of the area and provide continuing surveillance, if necessary. (After normal working hours, the off-shift health and safety technician will monitor the area and keep the dispatcher informed.)
- The emergency dispatcher should notify Plant Engineering Operations, the Custodian Group, and the Protective Force Division of the restricted area and maintain an up-to-date posting showing the status of all restricted areas.
- The ES&H team leader (or off-shift health and safety technician) should notify the emergency dispatcher when area access controls are removed so that the dispatcher can inform all service groups involved.

3.5 Responsibilities

3.5.1 Directorate

Assurance Managers are responsible for ensuring that each department, division, or major facility at LLNL maintains a Self-help Plan that addresses potential emergency situations. Self-help plans are based on credible emergencies and are consistent with the Laboratory-wide Self-help Program. These plans contain procedures for

- Making sure that all personnel are accounted for.
- Ensuring the safety and well-being of personnel.
- Providing first-aid response. (First-aid supplies, tools, preparedness information, and other materials are stored at each assembly point in special equipment lockers for use during emergencies that require activation of the Self-help Program.)
- Locating and rescuing trapped or injured personnel.
- Locating and reporting damage to facilities.
- Assigning activities to self-help volunteers.

Line managers are responsible for designating individuals for zone control and assembly point assignments.

3.5.2 Laboratory Self-help Program Manager

See the responsibilities described in Section 3.4.3.

3.5.3 Zone Supervisors

See the responsibilities described in Section 3.4.3.

3.5.4 Assembly Point Leaders

See the responsibilities described in Section 3.4.3.

3.5.5 Employees

All employees are expected to prepare for emergencies by

- Knowing the Laboratory's emergency number (911) and the number (447-6880) for reporting an onsite emergency using a non-LLIX phone (e.g., cellular phone). All LLNL telephones, including portable telephones, should have emergency number stickers. Contact the area ES&H team for additional stickers.
- Knowing the location of the assembly point designated for their workplace, including the shortest and safest way to get there, as well as alternate routes in the event that the best route is blocked. Remember that lights may go out and CAIN booths may not be working.
- Being aware of the assembly areas in other parts of the Laboratory that they visit frequently. Maps are posted near the exits of all buildings.

- Checking their workplaces periodically for situations that could present a hazard during a disaster.
- Using only properly secured bookcases, shelves, and cabinets for storage. Loose items (e.g., chemicals and glassware) may need shelf restraints. Details on seismic safety can be found in Chapter 27.
- Keeping aisles clear so that they can get out of the building quickly.
- Being familiar with any equipment they work on and how to safely turn it off.
- Considering signing up as a first-aid team member. This involves biennial training in first aid and cardiopulmonary resuscitation and being available during a disaster to assist the injured. Local first-aid teams are a vital part of the Self-help Program.

During an emergency, employees are expected to

- Report the incident by dialing 911 from any Laboratory phone or 447-6880 from a non-LLIX phone. Describe the incident to the emergency dispatcher, give the specific location of the incident, and indicate whether anyone was injured. Always give your name, the telephone number you are calling from, and remain on the line until released by the emergency dispatcher.
- Call for help whether the emergency is major or minor. It is better to call for help even though it may not be needed than to call for help after an incident has escalated beyond local control.
- Direct responding fire fighters to the emergency. In addition, inform the fire fighters of any hazards associated with the area, including any other information that will help them avoid injury. Follow the senior fire officer's instructions.
- Administer first aid or attempt to control the situation only if the correct emergency procedures are known and they do not endanger the rescuer or victim.
- Remove all injured persons and leave the immediate vicinity if there is a threat of further injury or over-exposure to hazardous material. If there is no danger, do not move the seriously injured.
- Protect themselves as well as others in the area. During an earthquake, take cover under a desk or table until ground motion stops. *In the event of a fire or chemical spill, move away from the hazard and, if possible, close but do not lock doors to put a barrier between you and the hazard.*
- Upon hearing an emergency message directing you to evacuate the building, do so immediately or as soon as feasible. IF TIME PERMITS, secure classified information before you leave. Take your personal possessions

with you because you may not be able to re-enter the building. If you have visitors, take them with you to the assembly point. Be alert for broken glass, exposed electrical wires, and spills as you leave. If you are a vehicle custodian, remember to take your vehicle keys before leaving the building. These vehicles will be used to transport the injured.

- Proceed to the nearest assembly point and wait for instructions after evacuating a building. If you are visiting another area at the Laboratory, go to the assembly point for that building.
- Provide the assembly point leader
  - — Any information about the injured or people trapped within the building.
  - — Any hazards that may exist (e.g., fires, spills, exposed electrical systems, or hazardous equipment that may be in operation).
  - — Any unsecured classified information.
- Be prepared to assist the assembly point leader in "sweeping" the building for injured personnel and hazards, administering first aid to injured people, shutting down equipment, and transporting the injured.

IMPORTANT: Employees must not re-enter their workplaces or leave the assembly point until the assembly point leader authorizes them to do so.

3.6 Training

Individuals with key management, planning, and response duties for onsite emergencies are required to complete certain training courses. Refer to the *LLNL Course Catalog* for information on duty-specific applicable courses.

3.7 LLNL Contacts

For additional information about this chapter, contact the Emergency Management Division (LLNL Fire Department, ext. 2-5194) of the Hazards Control Department.

3.8 References and Supporting Standards

DOE Order 5500.10, Change 1, "Emergency Readiness Assurance Program."

DOE Order 5500.1B, Change 1, "Emergency Management System."

DOE Order 5500.3A, Change 1, "Planning and Preparedness for Operational Emergencies."

LLNL Emergency Plan, Lawrence Livermore National Laboratory, Livermore, CA (UCRL-MA-113311).